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AD

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/277,222	03/26/99	YAMADA	0557-4630-3

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EXAMINER

CHEN, S

ART UNIT	PAPER NUMBER
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2852

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DATE MAILED: 07/23/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/277,222

Applicant(s)
Yamada

Examiner
Sophia S. Chen

Group Art Unit
2852



☐ Responsive to communication(s) filed on _____.

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-33 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1, 2, 6-9, and 13-33 is/are rejected.

☒ Claim(s) 3-5 and 10-12 is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☒ The drawing(s) filed on Mar 26, 1999 is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☒ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

☒ Attachment 1

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Drawings

1. The drawings are not objected to by the Draftperson under 37 CFR 1.84 or 1.152.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: r (page 11, line 6, etc.), N (page 12, line 24, etc.), and 39 (page 20, line 8, etc.). Correction is required.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 132 (Figures 4, 6A, 9, 11, and 13) and 41 (Figure 7). Correction is required.
4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "belt has a surface layer covered with a sponge-like heat insulating material" (claims 3, 5, 10, 12, and 18) and "a surface layer of the press roller" (claims 6, 7, 13, 14, 19, 20, 23, and 24) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
5. Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect can be deferred until the application is allowed by the examiner.
6. Since allowable subject matter has been indicated, applicant is encouraged to submit formal drawings in response to this Office action. The early submission of formal drawings will

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permit the Office to review the drawings for acceptability and to resolve any informalities remaining therein before the application is passed to issue. This will avoid possible delays in the issue process.

Specification

7. The disclosure is objected to because of the following informalities:
 - a. Page 12, line 24, "with" is misspelled, and it should be "width".
 - b. Page 19, line 12, "28b" is incorrect, and it should be "18b".
 - c. Page 20, line 22, "14 belt 15" is incorrect, and it should be "14 and belt 15".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. Claims 6-9, 13-16, 18-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 is considered to be indefinite because the meaning of JISA (last line) is unclear.

Claim 13 is considered to be indefinite because the meaning of JISA (last line) is unclear.

Claim 18 is considered to be indefinite because there is no antecedent basis for "said sponge-like heat insulating material" (lines 1-2).

Claim 23 is considered to be indefinite because the meaning of JISA (last line) is unclear.

Claim 27 is considered to be indefinite because there is no antecedent basis for "said surface layer" (lines 1-2).

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Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

10. Claims 1, 2, 17, 30, and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Moser, U.S. Pat. No. 5,890,047.

The patent discloses a fixing device 10 comprising an endless belt 12 passed over a plurality of rollers 14, 16, and 40 (Figure 1), a press roller 20 pressed against a portion of the belt 12 passed over a fix roller 14 belonging to the plurality of rollers (Figure 1), a heat source 42 being located at a position other than an inside of the fix roller 14 (Figure 1), a nip having a width greater than 25° inclusive in term of a circumferential angle as seen from an axis of the fix roller 14 (see Attachment 1 in red), a surface of the belt 12 being covered with a parting agent (column 5, line 52 to column 6, line 10), a drive force 48 for driving the belt 12 being applied to the fix roller 14 (column 5, lines 25-30), and a drive force being applied to the press roller 20 (column 5, lines 30-32).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moser in view of Hayashi et al., U.S. Pat. No. 5,581,340.

Moser, as discussed above, differs from the instant claimed invention in not disclosing the press roller 20 having a surface layer formed of an elastic material and less than 2 mm thick inclusive and having a hardness of higher than 40° inclusive in accordance with JISA.

Hayashi et al. discloses a fixing device 70 comprising a press roller 102 having a surface layer 102B formed of an elastic material and less than 2 mm thick inclusive and having a hardness of higher than 40° inclusive in accordance with JISA (abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the press roller as taught by Hayashi et al. in place of the press roller of Moser to have good fixing performance (Hayashi et al., column 1, lines 47-49).

13. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moser in view of Hayashi et al. as applied to claim 23 above, and further in view of Ohtsuka et al., U.S. Pat. No. 5,471,288.

Moser in view of Hayashi et al., as discussed above, further discloses the surface layer 102B of the press roller 102 being covered with fluorine resin, such as polytetrafluoroethylene (Hayashi et al., column 5, lines 54-57), but differs from the instant claimed invention in not disclosing the surface layer being covered with a material having a high parting ability.

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Ohtsuka et al. discloses the fluorine resin, such as PFA or PTFE (polytetrafluoroethylene) being a material having a high parting ability (column 4, lines 38-44).

It would have been obvious to one of ordinary skill in the art that the surface layer of the press roller of Hayashi et al. with PTFE material has a high parting ability because Ohtsuka et al. teaches that PTFE has a high parting ability.

14. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moser in view of Hayashi et al. and further in view of Ohtsuka et al. as applied to claim 25 above, and further in view of Yamamoto et al., U.S. Pat. No. 5,926,680.

Moser in view of Hayashi et al. and further in view of Ohtsuka et al., as discussed above, differs from the instant claimed invention in not disclosing the drive force being applied to the press roller via a one-way clutch.

Yamamoto et al. discloses a fixing device 30 comprising a fix roller 40, a press roller 50, a driving force of fixing motor 82, the press roller 50 being vertically moved (separating/contacting) by a swing arm 161, and the driving force being applied to the press roller 50 via a one-way clutch 112.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the driving mechanism as taught by Yamamoto et al. in place of the driving force of Moser in view of Hayashi et al. and further in view of Ohtsuka et al. to provide a fixing device wherein a skew and jitter of the recording sheet is prevented (Yamamoto et al., column 1, lines 54-56).

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15. Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moser in view of Ohtsuka et al.

Moser, as discussed above, differs from the instant claimed invention in not disclosing a surface layer of the press roller being covered with a material having a high parting ability.

Ohtsuka et al. discloses a fixing device comprising a fixing belt 7, a press roller 10, and a surface layer 12 of the press roller 10 being cover with a material having a high parting ability (column 3, lines 15-18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the press roller as taught by Ohtsuka et al. in place of the press roller of Moser to prevent toner sticking on the press roller.

16. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moser in view of Ohtsuka et al. as applied to claim 28 above, and further in view of Yamamoto et al.

Moser in view of Ohtsuka et al., as discussed above, differs from the instant claimed invention in not disclosing the drive force being applied to the press roller via a one-way clutch.

Yamamoto et al. discloses a fixing device 30 comprising a fix roller 40, a press roller 50, a driving force of fixing motor 82, the press roller 50 being vertically moved (separating/contacting) by a swing arm 161, and the driving force being applied to the press roller 50 via a one-way clutch 112.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the driving mechanism as taught by Yamamoto et al. in place of the driving force of

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Moser in view of Ohtsuka et al. to provide a fixing device wherein a skew and jitter of the recording sheet is prevented (Yamamoto et al., column 1, lines 54-56).

17. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moser in view of Yamamoto et al.

Moser, as discussed above, differs from the instant claimed invention in not disclosing the drive force being applied to the press roller via a one-way clutch.

Yamamoto et al. discloses a fixing device 30 comprising a fix roller 40, a press roller 50, a driving force of fixing motor 82, the press roller 50 being vertically moved (separating/contacting) by a swing arm 161, and the driving force being applied to the press roller 50 via a one-way clutch 112.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the driving mechanism as taught by Yamamoto et al. in place of the driving force of Moser to provide a fixing device wherein a skew and jitter of the recording sheet is prevented (Yamamoto et al., column 1, lines 54-56).

18. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moser in view of Yamamoto et al.

Moser, as discussed above, differs from the instant claimed invention in not disclosing the drive force being applied to the fix roller via a one-way clutch.

Yamamoto et al. discloses a fixing device 30 comprising a fix roller 40, a press roller 50, a driving force of fixing motor 82, the press roller 50 being vertically moved (separating/contacting)

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by a swing arm 161, and the driving force being applied to the press roller 50 via a one-way clutch 112.

Although Yamamoto et al. does not disclose the drive force being applied to the fix roller, it would have been obvious to one of ordinary skill in the art to reverse the driving mechanism by applying the driving force to the press roller instead of the fix roller and driving the fix roller via a one-way clutch.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the driving mechanism as taught by Yamamoto et al. and the reversing driving mechanism in place of the driving force of Moser to provide a fixing device wherein a skew and jitter of the recording sheet is prevented (Yamamoto et al., column 1, lines 54-56).

Allowable Subject Matter

19. Claims 3-5 and 10-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

20. Claims 6-9, 13-16, and 18-22 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112 set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

21. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not teach or suggest a fixing device comprising a fix belt having a surface

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layer covered with a sponge-like heat insulating material having a thickness which is more than 17% of a diameter of a fix roller inclusive and the sponge-like heat insulating material having a hardness of less than 30° inclusive in terms of Ascar Hardness.

Other Prior Art

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kusumoto et al., U.S. Pat. No. 4,598,990, discloses a fixing device comprising a fix roller, a press roller, and a driving mechanism.

Yamada et al., U.S. Pat. No. 5,666,623, discloses a fixing device comprising a fix belt, a fixing roller, a press roller, a heat source being located at a position other than an inside of the fix roller, and a driving mechanism.

Moser, U.S. Pat. No. 5,697,036, discloses a fixing device comprising a fix belt, a fix roller, a press roller, a nip having a width greater than 25° inclusive in terms of a circumferential angle as seen from an axis of the fix roller, and a release agent management.

Van Bennekom, U.S. Pat. No. 5,918,098, discloses a fixing device comprising a fixing roller/belt having a surface layer having a sponge-like insulating material.

Kato, JP 05-080666, discloses a fixing device comprising a fix belt, a fix roller, a press roller, a heat source being located at a position other than an inside of the fix roller, and a surface layer of the press roller having a hardness of higher than 40° inclusive.

Ishikawa et al., JP 08-286535, discloses a fixing device comprising a fix belt, a fix roller, a press roller, and a heat source being located at a position other than an inside of the fix roller.

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Contact Information

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sophia S. Chen whose telephone number is (703) 308-7617. The examiner can normally be reached on Monday through Friday from 7 am to 3 pm.

The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3431.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Sophia S. Chen

Patent Examiner

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SSC

July 21, 1999